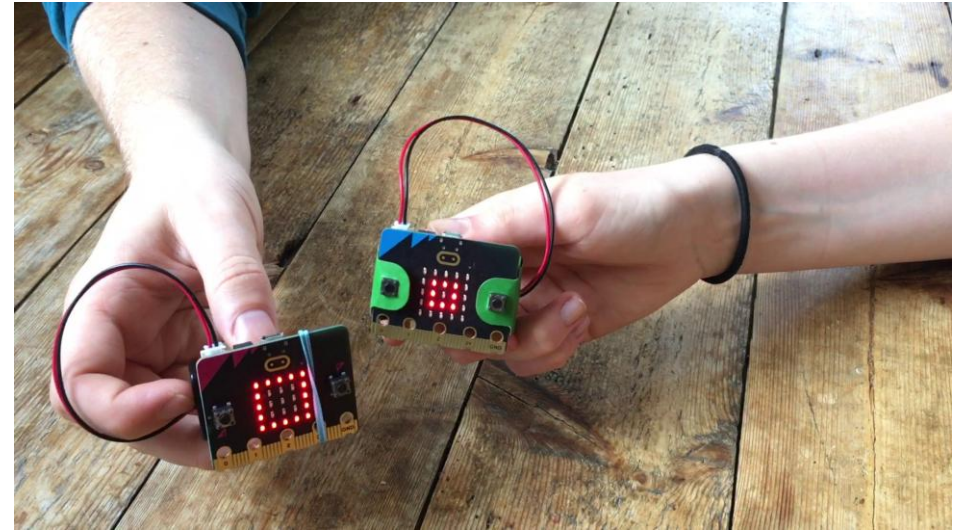




# micro:bit

First lessons with MakeCode  
and the micro:bit

## Lesson 6 Rock - Paper - Scissors



Open a new MakeCode project.

<https://makecode.microbit.org/>

Microsoft | micro:bit

Introduction to the BBC micro:bit

Show Instructions

My Projects [View All](#) [Import](#)

**New Project**

← Click here.  
Name your new project Rock-Paper-Scissors.

Tutorials

- New? Start Here **Flashing Heart**
- Name Tag**
- Smiley Buttons**
- Dice**
- Love Meter**
- Micro Chat**

Follow all the steps of this lesson. Do not skip any pages.

The screenshot displays the Microsoft MakeCode editor for a micro:bit. The top navigation bar includes the Microsoft logo, the text 'micro:bit', and a mode selector currently set to 'Blocks'. Utility icons for home, share, help, and settings are present, along with a 'Sign In' button. On the left, a virtual micro:bit board is shown with pins labeled 0, 1, 2, 3V, and GND. Below the board are icons for running, erasing, and other actions. A central sidebar contains a search bar and a categorized menu: Basic, Input, Music, Led, Radio, Loops, Logic, Variables, Math, Extensions, and Advanced. The main workspace is a grid with two blue blocks: 'on start' and 'forever'. At the bottom, there is a 'Download' button, a text field containing 'Rock-Paper-Scissors', and a toolbar with various editing tools.

Remove the 'on start' and 'forever' blocks.

The image shows the Microsoft MakeCode editor interface for a micro:bit. The top navigation bar includes the Microsoft logo, the text 'micro:bit', and tabs for 'Blocks' and 'JavaScript'. On the right side of the top bar are icons for home, share, help, settings, and a 'Sign In' button. The left sidebar features a visual representation of the micro:bit hardware and a block palette with categories: Basic, Input, Music, Led, Radio, Loops, Logic, Variables, Math, Extensions, and Advanced. The main workspace is a grid with two blue blocks: 'on start' and 'forever'. The bottom toolbar contains a 'Download' button, a text field with the text 'Rock-Paper-Scissors', and several editing tools.

Click on the Input blocks menu.  
Drag out the 'on shake' block.

The screenshot shows the Microsoft MakeCode editor interface for a micro:bit. The top navigation bar includes the Microsoft logo, the 'micro:bit' label, and tabs for 'Blocks' and 'JavaScript'. On the left, there is a visual representation of the micro:bit board with its pins labeled 0, 1, 2, 3V, and GND, and buttons A and B. A central menu is open, displaying a search bar and a list of categories: Basic, Input, Music, Led, Radio, Loops, Logic, Variables, Math, Extensions, and Advanced. The 'Input' category is selected, showing a list of blocks including 'on button A pressed', 'on shake', 'on pin P0 pressed', 'button A is pressed', 'acceleration (mg) x', 'pin P0 is pressed', 'light level', 'compass heading (°)', 'temperature (°C)', and 'is shake gesture'. The 'on shake' block is highlighted in pink and is being dragged into the workspace on the right. The workspace contains a single 'on shake' block. At the bottom, there is a 'Download' button and a project name 'Rock-Paper-Scissors'.

Add the 'if true then else' block inside the 'on shake' block. Expand the 'if' block as you see below.

The screenshot displays the Microsoft MakeCode editor interface for a micro:bit project. On the left, there is a visual representation of the micro:bit board. The central panel shows a 'Logic' block palette with categories like Conditionals, Comparison, and Boolean. The main workspace on the right shows a script starting with an 'on shake' block. An 'if true then' block is added to the 'on shake' block, and a red arrow points to its expansion handle (+). A second red arrow points to the 'else if false then' block that appears after expansion. The bottom of the screen shows a 'Download' button and the project name 'Rock-Paper-Scissors'.

Click “Make a Variable”.  
Create a variable called “random-number”.  
Add ‘set random-number to 0’ block.

The screenshot displays the Microsoft MakeCode editor for a micro:bit. The top navigation bar includes the Microsoft logo, the micro:bit logo, and tabs for 'Blocks' and 'JavaScript'. On the left, there is a hardware view of the micro:bit board and a block palette with categories like Basic, Input, Music, Led, Radio, Loops, Logic, Variables, Math, and Extensions. The 'Variables' block palette is open, showing a 'Make a Variable...' button highlighted with a red arrow. Below it are 'set random-number to 0' and 'change random-number by 1' blocks. The workspace on the right shows a script starting with an 'on shake' block, followed by a 'set random-number to 0' block, and an 'if-then-else' structure. The 'if' condition is 'true', and the 'else if' condition is 'false'. The 'else' block is currently empty.

# Make this code sequence.

Microsoft | micro:bit

Blocks JavaScript

Search...

Basic

- Basic
- Input
- Music
- Led
- Radio
- Loops
- Logic
- Variables
- Math
- Extensions
- Advanced

show number 0

show leds

show icon

show string Hello!

clear screen

forever

on start

pause (ms) 100

show arrow North

on shake

set random-number to pick random 1 to 3

if random-number = 1 then

show icon

else if random-number = 2 then

show icon

else

show icon

Download

Rock-Paper-Scissors

Download your code.

## Test Your Code

Disconnect the USB cable from the micro:bit device. Check in with Mr. Desmond to get a battery pack for your micro:bit.

Shake the micro:bit device to test how your code works.

How do the different icons appear?

When is it rock? When is it paper? When is it scissors?

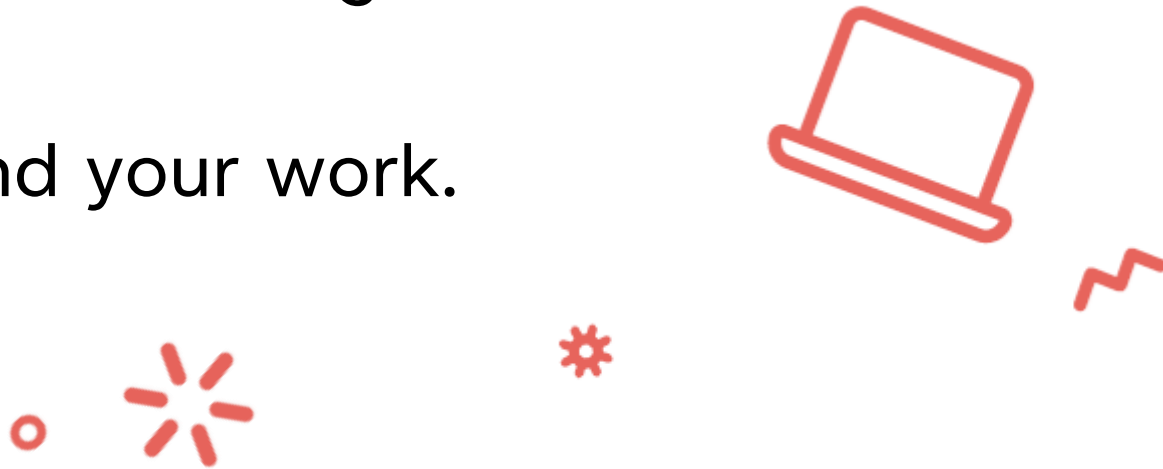
Show Mr. Desmond how your micro:bit device works.

Ask for a second micro:bit device from Mr. Desmond.

Download your code onto your second micro:bit device and play a game of rock-paper-scissors with a friend.

On the same piece of paper you used from Lesson 6 explain how you were able to combine inputs, random symbols, variables, and logic to make a computer simulation of a real-world game.

Show Mr. Desmond your work.



# Think About What You Have Accomplished

- In these six lessons, you've used outputs (LED display) to show words, numbers, symbols, and pictures.
- Created sequences to make animations.
- Used button inputs as controls.
- Used the accelerometer and variables to make a counter.
- Simulated a game of chance using logic.

## Next Steps

What are you going to make next?

